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Localized Nontuberculous Affection of Spine.—Two cases of spinal disease in children resembled Pott's disease clinically but not radiographically. By the latter it was seen that the lesion was limited to one vertebra; the adjacent discs above and below were entirely intact; the cartilage was thicker and there was evidence of new cartilage—a condition never seen in tuberculosis; there was an increase in bone density. Tuberculin and Wassermann tests were both negative. The disease may have been infectious. The roentgenograms resemble to a degree and suggest some connection between these cases and coxa plana, Legg-Calvé's disease, infantile osteochondritis of the hip and Koehler's disease. The affection is probably to the spinal column what coxa plana is to the hip and what Koehler's disease is to the foot.—*A Localized Affection of the Spine Suggesting Osteochondritis of the Vertebral Body, with the Clinical Aspect of Pott's Disease, J. Calvé, J. Bone & Joint Surg., January, 1925, vii (old series, xxiii), 41.*—(*H. S. W.*)

Influence of Pulmonary Tuberculosis on Evolution of Pregnancy.—It would appear that in maternal pulmonary tuberculosis, premature labor is as frequent as full-term labor, and that miscarriage is infrequent. Experimental data are similar to clinical results. In female animals inoculated before fecundation, Landouzy found that gestation usually went to term, while in females inoculated during gestation, the evolution of the pregnancy varied with the time the inoculation was made and especially with the virulence of the bacillus inoculated. The animals rarely miscarried. Most observers maintain that tuberculosis has little influence on the evolution of pregnancy. As to the offspring being born with tuberculosis, one must consider two questions; namely, hereditary contagion and hereditary predisposition. Direct transmission of the maternal tuberculosis to the fetus does occur, although exceptionally, and has been demonstrated by clinical data, likewise experimentally. It is only after labor that tuberculosis becomes aggravated and generalized. One may conclude from both clinical and experimental data that congenital tuberculosis is unquestionably rare, and that in the majority of cases the fetus is born intact. Now, although the fetus is not born tuberculous in the bacteriological sense of the word, it is predisposed. The offspring of phthisical parents inherits cells which react quite as badly as those of the parents against tuberculous infection. Therefore, the heredity of soil, hereditary predisposition, is at present generally accepted. It is above all the future of children born of tuberculous mothers that seems favorable to this theory. Voron's statistics, covering six years at the Lyons Maternity Hospital, show that 68 per cent of the offspring of tuberculous mothers had died. The future of children born of phthisical parents must largely depend upon the social situation of the latter.—*Influence of Pulmonary Tuberculosis on the Evolution of Pregnancy and the Offspring, C. G. Cumston, Med. J. & Rec., February 4, 1925, cxxi, 137.*—(*B. T. McM.*)

Menstruation and Immunity to Tuberculosis.—Although much has been written about the influence of this physiological function on various bodily states, little has been written about its relation to immunity of the body to various diseases. Many facts are known, however, as to its relation to tuberculosis, such as its inhibition during acute or rapidly progressive stages, the aggravation of toxic symptoms (for

example, hyperpyrexia, increased secretion of fistulae) during mensturation. Selter thinks that menstruation produces a lessened sensitiveness and lessened immunity to the infection, and causes the body to be more liable to dissemination of tubercle bacilli. At times a subsiding tuberculin reaction may become reinflamed, and this bespeaks some influence on the immune state and allows escape of toxic substances from the focus.—*Zur Frage: Menstruation und Tuberkuloseimmunität, M. Schur, Wien. klin. Wchnschr., November 6, 1924, xxxvii, 1164.*—(*H. S. W.*)

Tuberculous Polyadenomatosis of Colon.—A young man was operated on for acute appendix abscess with perforation. A fistula persisted for a year. Exploratory operation showed that it led to the cecum, the mucosa of which was thick, granular, and violaceous. Resection of the right colon and anastomosis of the ileum with the transverse colon was performed. Cure resulted. The pathological examination showed clearly tuberculous lesions in the form of polypoid projections extending throughout the colon.—*Polyadenomatose tuberculeuse du colon droit, M. Tavernier, meeting, Soc. d. Chirurgie d. Lyon, November 13, 1924, reported in Presse Méd., December 10, 1924, no. 99, 988.*—(*A. P.*)

Classification of Pulmonary Tuberculosis.—An ideal classification ought to comprise, in a logical system, real identities and their causal phenomena. This is particularly difficult in a protean disease like tuberculosis, with its numerous clinical variations. We lack detailed immunobiological knowledge to fit these clinical manifestations, and still another gap is the absence of constantly related functional disturbance. Pathological respiratory symptoms may be due to many conditions other than tuberculosis, and such means of investigation as spirometry and pneumography have proved disappointing as criteria. There is no functional test for the lungs comparable, in its information, to renal function tests. *Clinical classifications:* Unfortunately, in tuberculosis symptoms cannot, as in typhoid fever, be arbitrarily arranged in an invariable order of appearance. Hence all symptomatic classifications are too schematic and didactic. *1. Grancher's classification:* This was established long ago but is still widely used. Grancher distinguishes four stages: (1) germination, (2) infiltration, (3) softening, and (4) cavitation; he associates these stages with definite physical signs. The more unusual pneumonic variations are difficult to place in this scheme. *2. Classifications of Spengler, Turban and Bacmeister:* The first lays chief stress on the presence of fever and tubercle bacilli in the sputum, whence the term active and inactive, open and closed tuberculosis. Turban's classification is based on topography and extent according to lobes involved, while Bacmeister uses the terms *cirrhotic, pneumonic* and *fibrous* tuberculosis. *3. Bard's classification:* This French author divides all pulmonary tuberculosis into (1) tuberculosis of the pulmonary parenchyma, (2) of the bronchi, (3) of the pleura, (4) interstitial forms (*granulie*), and (5) lymphatic tuberculosis (of the hilum and mediastinum). From the standpoint of evolution the lesions may be caseous, fibrocaseous and fibrous, and, as to distribution, extensive or limited. There are indeed gaps and inconsistencies in this scheme; for example, a true tuberculosis of the bronchi without involvement of the parenchyma is of doubtful reality. Also primary pleural tuberculosis is a rarity. The interstitial forms are supposed to be disseminated along hematogenous or lymphatic routes. *4. Neumann's classification:* This Viennese clinician adopts, as a basis, the pathological findings of Aschoff and Bacmeister's notions of latency and progression. His three main groups are (1) fibrous tuberculosis, (2) fibrocaseous tuberculosis, and (3) abortive tuberculosis. There are subdivisions of ulcerating cavitary, stationary cavitary, and discrete miliary tuberculosis. He deals chiefly with the chronic varieties of the disease. *Pathological classifications: 1. Fränckel-Albrecht:* These authors recognize three chief groups: (1) cirrhotic, (2) nodular, which may be bronchial, peribronchial and perivascular, or (3) caseous pneumonic. The cirrhotic processes are afebrile, the nodular subfebrile, and the pneumonic acutely febrile. *2. Aschoff:* He starts with the initial evolution of the tubercle as follows: (1) productive tuberculosis, with much connective-tissue reaction, and (2) exudative tuberculosis, in which there is exudate in the alveoli and a tendency to necrosis and liquefaction. Etiologically, Aschoff recognizes (1) latent infection, (2) effective infection, (3) retrograde infection, (4) endogenous reinfection, and (5) exogenous reinfection. Clinically, there are seen initial disseminated and ulcerative stages. Anatomically, there are (1) miliary or interstitial forms, (2) conglomerate nodules, and (3) confluent forms. *3. Nicolle* bases his scheme on Aschoff's, but extends it to include the pathogenesis, as follows: (1) bronchogenous forms, usually localized; these include acinonodular, cirrhotic, lobular and lobar bronchopneumonic; (2) hematogenous, or generalized forms, either intraäcinous or interstitial. *4. Le-*

tulle: This author elaborates on the pneumonic forms, among which he distinguishes (a) conglomerate caseous bronchopneumonia, and (b) diffuse caseous bronchopneumonia. Truly lobar forms do not exist. Among the incipient forms, he distinguishes the sclerotic and the evolutive; among the chronic, the caseous bronchopneumonic, the peribronchial, and the sclerocaseous. *5. Ranke:* This is one of the most interesting attempts at classification, as the altered humoral reactions at different phases are considered, analogy being shown to syphilis, with primary, secondary, and tertiary phases. The primary complex consists of a pulmonary focus, generally apical, and lymphatic metastases; caseation is rare, and encapsulation and calcification the rule. The secondary phase is marked by toxic phenomena and great hypersensitiveness to tuberculin; generalizations of all kinds are likely to occur. The tertiary phase is represented by chronic phthisis in which hematogenous and lymphatic metastases are seldom prominent. *Radiological classification:* This method of examination has revealed much, but the findings are often open to various interpretations, and it is likely that in the past undue importance has been given certain apical, hilar and truncal shadows. Nevertheless, a diagnosis may at times be made from the radiological findings before the appearance of physical signs. In the matter of classification radiology rests far more on anatomical than clinical grounds. Perhaps one of the best attempts of this sort is that of Gerhartz, who distinguishes: (1) tuberculosis with small disseminated nodules, (2) forms with larger nodules, (3) tuberculosis with homogeneous foci, (4) hilar tuberculosis, (5) cirrhofibrous tuberculous, and (6) atypical tuberculosis including metastatic forms. Likewise, Aschoff's two main types, productive and exudative, are recognized. *Conclusions:* The great obstacle to all classifications is the great difficulty in correlating the humoral mechanisms of tuberculous infection with physiological disturbances and anatomical changes. All present systems are merely parts of a network of ideas more or less related to one another.—*Contribution critique à la classification de la tuberculose pulmonaire, Iagnov, Rev. d. l. Tuberc., January, 1925, vi,* 42.—(*A. P.*)

Classifications of Pulmonary Tuberculosis in Adults.—The anatomical-clinical classification of Bard is fundamental. It is based essentially on macroscopic anatomy, and divides the lesions according to the predominating tendency toward fibrosis or caseation. Histologically, this classification distinguishes the miliary tubercle, the follicular tubercle, and the tubercle of bronchioalveolitis of bronchial origin. Any of these may proceed to caseation or sclerosis. In contrast, Aschoff's classification is based on histology. He distinguishes two essential reactions, exudative and productive, which decide the course of the disease, the assumption being that the same subject always reacts in the same way. Productive lesions usually tend to sclerosis; exudative ones, to caseation. Mixed types exist. Exudative lesions may, though rarely, become fibrous, and productive ones may terminate in caseation. It seems, therefore, that the histological conception loses its importance and that we must revert to the macroscopic distinction of fibrous, fibrocaseous, and caseous forms. Histologically, Aschoff's description of the essential types does not agree with that of French authors. The productive lesion is essentially intraalveolar and probably corresponds to the miliary tubercle of Laennec, which, for the French, is at its centre a lesion of bronchioalveolitis. Thus, chronic tuberculosis, for the French, would always be exudative. The hematogenous origin of the intraäcinous nodular forms of the Germans is also questioned. German radiologists have described signs of identification of the anatomical types of Aschoff, but these signs seem to be very theoretical. Aschoff has not mentioned any clinical feature characteristic of the anatomical forms which he describes, and the various clinical classifications of the Germans take little or no notice of the corticopleuritides. The classification of Ranke, based on variations of the humoral state in the course of chronic tuberculosis, is theoretical and inexact. In fact, it is impossible to map out strictly exact anatomico-clinical forms of chronic tuberculosis. The chief types, the sclerosing and the caseating, are defined. The first of these may be confined chiefly to the stroma of the lung, and for this the designation *tramite bacillaire* is proposed.—*Les classifications françaises et allemandes des formes de la tuberculose pulmonaire de l'adult: la notion de "tramite" bacillaire, G. Potez, Thèsis de Paris, reviewed in Presse Méd., October 17, 1925, no. 83, 1385.*—(*J. B. A.*)

Classification of Chronic Pulmonary Tuberculosis.—A critical review of the various classifications of pulmonary tuberculosis, with emphasis on the extent of the process, the anatomical form and the immunobiological behavior of the case, is presented. For the determination of the grade of disease physical examination is given

emphasis, while the form is determined by the X-ray. An extensive classification is presented in detail for the determination of the chronic pulmonary tuberculosis patient. The original article should be consulted.—*Zur Klassifikation der chronischen Lungentuberkulose. Ein Vortrag mit Schema, K. Turban, Ztschr. f. Tuberk., 1924, xl, 404.*—(*H. J. C.*)

Remarks on Turban's Classification.—The foregoing classification of Turban recommended itself for exhaustive investigation to the *German Central Committee for Combating Tuberculosis*, to determine its value in practice.—*Bemerkungen zu dem Aufsatz von Turban, Helm, Ztschr. f. Tuberk., 1924, xl,* 412.—(*H. J. C.*)

Psychology, Psychopathology and Psychotherapy in Tuberculosis.—This article was written to refute statements appearing in recent publications, in which the mental status of the tuberculous is pictured in a manner not based on facts and experience but appears most unfair and unjust to the consumptive sufferer. The opinions of leaders in medicine are quoted, to deny the charges, and the productive work of many tuberculous physicians is cited. To prevent the possible development of a psychosis or pyschoneurosis in a tuberculosis patient, the physician should receive him in a well-appointed office. If at all possible, tuberculosis patients should be received by special appointment. A reception room full of coughing patients, some not over-careful when coughing, spraying the air with infectious droplets, may be enough to lay the foundation of a psychosis. The patient should be told that if a hemoptysis has occurred or will occur, it is one of the phases of the disease which by no means lessens chances of recovery. Concerning the sputum he should be assured that, if he takes care of it, there is not the slightest danger of giving the disease to anybody else, and his relatives and friends who may be with him should be warned against developing phthisiophobia. Nothing will make the tuberculosis patient more despondent and miserable than to be treated like a leper. The prognosis should be always guarded but expressed in hopeful terms, and no fixed time for recovery should be set. The patient should be impressed with the fact that the more carefully he carries out his instructions, the sooner he may look for the arrest of the disease. The patient should be asked directly if he has any mental anxiety, and, if it is within the power of the physician to remove it, he should endeavor to do so. Good but not exciting books and quiet and hopeful conversation will help to pass the time pleasantly and lead the invalid's thoughts away from his disease. The controlled diaphragmatic breathing, which may also be called rest-breathing, aside from its beneficial physical effects, has proved to be of great value in diverting the patient's mind from his troubles, as it requires concentration. In institutions the patients should be forbidden to relate their troubles to one another or to give advice to do this or that. If the patient desires a climatic change, having heard that in this or that climate some one was cured, it may often be just as well to let him have his way. In the actively tuberculosis invalid one quite often finds a disinclination to take food, or a sufficient amount of food. This type of anorexia is rarely based on evident gastric or intestinal disturbances, but may be considered exclusively nervous or psychic. Such patients may be taught that their capacity for digesting and assimilating is far greater than their appetite may indicate, and, if they can overcome their disinclination and eat regularly and sufficiently, they will improve rapidly. In conclusion, the author protests against the accusation that the million tuberculous still in the midst of our population, have reverted to childishness, are driven by unbridled emotions, are egotistical, egocentric, and ungrateful, and that nearly 50 per cent of them are definitely suffering from psychoneurosis or psychosis. With equal ardor, he would defend against these characteristics the more than 10,000 American soldiers who returned to us tuberculous from the World War, as well as those who succumbed to the disease overseas.—*Psychology, Psychopathology and Psychotherapy in Tuberculosis in Civilian and Military Life, S. A. Knopf, Med. J. & Rec., May 20, 1925, cxxi, 601.*—(*B. T. McM.*)

Some Aspects of Tuberculosis in Military Life.—*1. Frequency of different localizations:* A statistical study by Rist of 3,407 exempted and invalided men showed 247 cases of pulmonary tuberculosis, active, torpid or cured, and 167 cases of extrapulmonary tuberculosis; that is, of each 100 men affected with tuberculosis, 60 per cent had pulmonary and 40 per cent extrapulmonary localization. The medical statistics of the French Army between 1903 and 1912 have also been studied, allowance being made for a change in classification occurring in 1910. Prior to that time, tuberculosis of the larynx, lungs and pleura were lumped under the single heading *tuberculosis of the respiratory tract*, and likewise peritoneal and enteric tuberculosis

were both included under *abdominal tuberculosis*. A close investigation seems to indicate that tuberculosis of the pleura made up about 6 per cent of cases of tuberculosis of the respiratory tract, but to this figure must be added a large number of pleurisies not definitely classified as tuberculous, which multiplies the figure several times. It may be estimated that the real proportion of tuberculous pleurisies is about one-quarter of the total number of cases of pulmonary tuberculosis. Of the total exemptions from military service for tuberculosis 24,730 (about 75 per cent) were for pulmonary tuberculosis, 8,290 (about 25 per cent) for extrapulmonary tuberculosis. During the same ten-year period the number of those deceased and invalided for tuberculosis was 33,350 (79 per cent) for pulmonary tuberculosis, and 8,950 (21 per cent) for other varieties; if, however, we subtract the cases of pleural tuberculosis from the first and add them to the second category, we have about 75 and 25 per cent, a somewhat different proportion from the 60 and 40 per cent found by Rist. This is probably because of the different age periods and different lethality or chronicity of the various forms. *Etiological factors revealed by statistics:* The following conclusions have been reached: (1) Each year the development of tuberculosis in the army bears practically no relation to the number of the tuberculous eliminated on admission. (2) Tuberculosis in a military environment varies about as it does in civil life. (3) The development of tuberculosis in the army varies inversely according to the number of constitutional weaklings rejected for admission. Thus, the evolution of tuberculosis is conditioned almost exclusively by selection. The rigidity of selection has varied from time to time, and this is reflected in the tuberculosis curves. An attempt has been made to see whether there is any relation between the incidence of other infectious diseases and of tuberculosis, but the results have been practically negative. *Conclusions:* 1. The development of tuberculosis in the army is independent of contagion (from other causes in the army). 2. The army, as regards tuberculous involvement, is only the image of the nation, more or less corrected by selection. 3. In both civil and military life there is a parallelism between general morbidity and mortality and those from tuberculosis. 4. The epidemic, so called "anergizing," diseases have no effect on the evolution of tuberculosis, nor do other diseases of the respiratory tract. 5. It seems that the evolution of endemic tuberculosis is conditioned by the profound and obscure causes which determine general morbidity.—*Sur quelques aspects de l'endémie tuberculeuse, A. Jeandidier, Rev. d. l. Tuberc., January, 1925, vi, 22.*—(*A. P.*)

Pulmonary Tuberculosis in Army Recruits.—The young soldiers who were the subject of investigation belonged to the second contingent of the class of 1924, were all twenty years of age, and had already been passed for military service. To be exact, there were 405 soldiers, 200 attached to cavalry regiments and 205 to infantry. The following examinations were carried out: (1) a fairly complete clinical examination, (2) a tuberculosis complement-fixation test, and (3) pulmonary radiography. Of the group, 75 per cent came from rural districts, and 25 per cent from cities, of which about half were from Paris. The rural provinces represented were Normandy, Brittany, Savoy and Central France. *Complement fixation:* Approximately 20 per cent of positive reactions were obtained, the urban incidence being 50 per cent higher than the rural. The infantry recruits from Paris showed 34 per cent positives. Of the 82 positives 12 had hereditary tuberculous antecedents, 10 collateral family tuberculosis, and 4 a personal history suggesting tuberculous manifestations. Altogether, 37 recruits had had some pleuropulmonary manifestations prior to their arrival, and these showed 30 per cent positive reactions. Definite abnormal respiratory signs were rare, but among 36 cases of marked tachycardia there were 11 positive reactions (30 per cent). *Radiological findings: (1) Evolutive pulmonary tuberculosis:* There were 3 very definite and characteristic cases of this sort, and 12 less characteristic. The former gave 100 per cent positive complement fixations, the latter 75 per cent. None of these cases exhibited râles on physical examination, and symptoms were slight or absent. They were all, however, kept under careful observation. *(2) Cicatricial pulmonary tuberculosis:* There were 19 in this group, 7 having apical lesions. These gave 57 per cent complement-fixation reactions. Most of them showed small calcareous densities, most often at the right apex, and often similar hilar densities on the same side. The other 12 gave 50 per cent positive complement-fixation reactions. They showed usually a small fibrocalcareous nodule or nodules in the lower part or at the base of a lung field. Of these, 5 had suggestive personal histories, 3 of them pleurisies and 1 "pleuropneumonia." Physical signs were practically normal. *(3) Pulmonary veils:* These were seen in 31 cases, and 32 per cent of them showed

positive complement fixations. The veils were usually in the right lung field and quite strikingly apparent. Hardly any had histories of antecedent pleurisy and it was concluded that the densities were probably intrapulmonary. (*4*) *Hilar abnormalities:* There were 48 cases showing calcified nodules or densities, at one or both hila, predominantly the right. All were in good health, 6 had a history of respiratory antecedents, 16 per cent gave positive complement-fixation reactions, which was no higher figure than among the normals. (*5*) *Normal or subnormal pictures:* These constituted 73 per cent. A history of tuberculous antecedents was rare and most of the positive complement fixations occurred among such subjects. The term *subnormal* is used to define those pictures which showed some minor changes, not necessarily abnormal, such as fine network of markings, extensive diffusion of hilar shadows, etc. *Conclusions:* 1. Slight respiratory anomalies do not necessarily correspond with evidence of pulmonary parenchymatous lesions. 2. Radiographic evidence of evolutive tuberculosis is an indication for rejection, at least temporarily; evidence of cicatricial discrete or hilar tuberculosis should indicate observation. 3. A positive complement-fixation reaction, while not at all conclusive of active tuberculosis, is confirmatory evidence in suspicious cases.—*Enquête sur la tuberculose pulmonaire à l'occasion de l'incorporation de quatre cents jeunes soldats, J. Rieux and G. Chaumet, Meeting, Section d'études scientifiques de l'Oeuvre de la Tuberculose, December 13, 1924, Reported in Rev. d. l. Tuberc., March, 1925, vi, 238.*—(*A. P.*)

Tuberculosis in Aged.—In a study of tuberculosis in people dying between the ages of 50 and 90 all the types of tuberculosis common in the earlier years of life were encountered, although the larger number were of the chronic indurative and ulcerative type. Tuberculous caries, meningitis and generalized miliary tuberculosis were not rare. Attention is called again to the great frequency of unrecognized tuberculosis in the aged. Although anatomically extensive the process may be clinically mild. In this way much dissemination of the infection is favored.—*Ueber Alterstuberkulose, R. Taubert, München. med. Wchnschr., May 15, 1925, lxxii,* 798.—(*E. R. L.*)

Tuberculosis and Family Physician.—The costliness of the sanatorium treatment of tuberculosis makes home treatment necessary in many cases. The results of such home treatment are dependent upon the intelligence of the family physician, who is sorely deficient in this respect. Rules and measures are outlined for the control of tuberculosis, especially from a therapeutic standpoint and for the protection of those exposed. The present method of teaching tuberculosis in universities to physicians is almost exclusively limited to that taught by theoretical teachers and is unsatisfactory. The students should be sent for practical courses to a tuberculosis sanatorium, and for the convenience of the practising physician there should be opportunity arranged and courses instituted in specially designated sanatoriums.—*Der Hausarzt in der Tuberkulosebekämpfung jetzt und künftig, K. H. Blümel, Beitr. z. Klin. d. Tuberk., 1924, lviii, 385.*—(*H. J. C.*)

Local Anesthesia in Tuberculous.—In considering the question of local versus general anesthesia in the treatment of tuberculosis patients one must not overlook the fact that by far the greatest amount of surgery is performed by those who are below the average in surgical ability and under auspices which are far below the ideal. If it is admitted that the local anesthesia method is the safer in the hands of experts, who are usually equipped with the best protective measures that can be afforded for general anesthesia, it is certainly true in the case of those who are not so expert or so well equipped. In tuberculosis patients regional anesthesia is the method of choice. The anesthetic solution should, perhaps, not be injected into tuberculous areas, although, as a matter of fact, this point has not been definitely proved. Fortunately, conductive anesthesia is applicable to almost every region which must be attacked surgically. The tuberculosis patient should, whenever possible, have his resistance raised to the highest level before being subjected to a surgical operation. Local anesthesia and a refined technique offer the tuberculosis patient requiring a surgical operation the best chance of maintaining his already lowered resistance during and following the operation.—*Local Anesthesia in the Tuberculous Patient, R. E. Farr, Med. J. & Rec., April 1, 1925, cxxi,* 392.—(*B. T. McM.*)

Tuberculosis Problems.—Our viewpoint in tuberculosis is changing; older concepts are being modified or done away with entirely. Pathological-clinical relationships are giving way to immunological concepts. A general review is given of the changing point of view of classification of the disease, of focal inflammations and resorption, of immunity, and of changing ideas on childhood tuberculosis.—*Neuere Anschauungen*

aus dem Gebiete des Tuberkuloseproblems, A. Marberger, Klin. Wchnschr., March 12, 1925, iv, 503.—(H. S. W.)

Studies on Tuberculosis Mortality.—There has occurred a diminution in deaths from pulmonary tuberculosis, with, on the other hand, an increase in those produced by meningitis and miliary tuberculosis. The economic situation is of more importance for the spread of tuberculosis than is the housing question. Childhood mortality becomes more marked in the towns which have limited their sanatorium treatment within recent years. It becomes necessary, therefore, to emphasize the treatment of tuberculin-positive children as well as those actually ill. The conception "infectious" tuberculosis is of more importance practically than the terms "open" and "closed" tuberculosis.—*Untersuchungen über die Tuberkulosesterblichkeit und die zweckmässige Umstellung unserer Fürsorgemassnahmen auf die soziale Nothlage, Elisabeth Dehoff, Beitr. z. Klin. d. Tuberk., 1924, lviii, 401.—(H. J. C.)*

Influence of Antituberculosis Campaign on Tuberculosis Mortality.—The question is asked, are the results of organized antituberculosis work and measures sufficient to warrant their further extension and intensification? Philip was the founder in 1887, at Edinburgh, of the first tuberculosis dispensary, and a prime instigator o the present antituberculosis measures in Great Britain. In Great Britain antituberculosis dispensaries multiplied rapidly after 1887, and sanatoria and special hospitals were also established. Notification was made obligatory in 1912. At present there are 475 dispensaries, 420 tuberculosis officers, and 23,031 beds for tuberculosis. The curve of mortality from pulmonary tuberculosis in Scotland over a fifty-year period (1871–1921) shows a diminution which is especially marked in recent years; from 1871 to 1891 the rate of diminution was 32 per cent; from 1901 to 1921 it was 46 per cent. Similar results are shown for England and the United States; indeed, in the latter case, they are still more pronounced. These results cannot be entirely accounted for by improvement in general hygiene and sanitation, for the reduction in general mortality has been much less, especially in the last decade, when it was only reduced 10 per cent as compared with 31 per cent for the tuberculosis mortality. Nor can one explain the diminished mortality on the basis of immunization developing in long-civilized communities, in the face of the unequal distribution of tuberculosis in various European countries and cities. It must be admitted that the chief factor has been the development of an antituberculosis organization based on prophylaxis. In the state of New York, for example, when dispensaries were established for tuberculosis in 1907, the mortality was 238 per 100,000; in 1921 it was 106, and has since fallen to 95.—*Les effets de l'organisation de la lutte antituberculeuse sur la diminution de la mortalite tuberculeuse, R. Philip, Conférence Internationale contre la tuberculose, Lausanne, August 5–7, 1924, reported in Rev. d. l. Tuberc., December, 1924, v, 764.—(A. P.)*

Tuberculosis Colonies.—The first mention found of such colonies is in the *British Medical Journal* for July 23, 1898, where Philip makes a plea for the founding of agricultural colonies, based on his experience at the Royal Victoria Hospital at Edinburgh. Experience seemed to show that complete latency of tuberculous symptoms could not often be obtained, even by prolonged sanatorium treatment, while, on the other hand, carefully measured work seemed to help rather than hinder favorable progress. According to the original conception of such colonies, the patients remained under medical control, in order to adapt themselves gradually to normal working conditions, and the kind and duration of the work were regulated by the physician. Their ultimate anticipation was their departure from the colony to resume a suitable occupation. Many sanatoria developed similar projects as adjuncts to their treatment, and the cost was not found excessive. The results were encouraging according to the care and attention given. Later, with the war, came the problem of rehabilitation of the soldiers, and largely due to Varrier-Jones the realization of the idea of permanent colonies. Rehabilitation or reëducational colonies must be differentiated from permanent colonies or settlements. *Reëducational work colonies:* The fundamental principle is a period of apprenticeship for a certain category of tuberculous men, at the expiration of which they will be prepared for a trade. A change of occupation is always difficult to accomplish, even in the case of well men. It is especially so for the tuberculous, and many obstacles have been encountered. In many cases the period of training has had to be prolonged, and special effort has been necessary to place the men on departure. *Permanent colonies (settlements):* Of these the Papworth Colony in England is the best example. The following advantages are secured: (1) a permanent home and work for ex-soldiers,

(2) the social benefit of family and home life, (3) medical supervision, and (4) removal of the stigma of incurables because no advanced cases are admitted. Preston Hall is another institution of this order. The details of organization must be carefully studied. Among the trades followed are carpentry, woodwork, horticulture, poultry-raising, pig-raising, printing, bee-culture, jewelry, etc. There are houses for the celibates and villas for married men and families. Fair salaries are paid to the men in addition to their pensions, and both the men and their families are cared for medically. The capital necessary for such establishments as Papworth and Preston Hall approaches 250,000 pounds sterling. Most of this has been by voluntary contribution. It must be recognized that a large number of the tuberculous are unsuited for these colonies. Secondly, most of their success depends on the personality, initiative and executive capacity of the directors. Menzies believes that, valuable as such establishments are, they can play but a limited part in the national programme for tuberculosis in civil life. The money required is better spent on the development of a good dispensary system, and extension of sanatorium treatment in special cases, together with committees for after-care and assistance. *Reëducational Colonies:* In many cases these have involved too ambitious projects, with the buying of vast domains and erection of huge buildings, which at once ties up large amounts of capital. Also, men have been sent to these colonies who were obviously unsuited for them, and sent away with no provision for finding suitable work. The best example of a colony of this sort is Burrow Hall, administered by a committee of the British Antituberculosis Association. The Medical Director has been handicapped by his inability to limit admissions strictly, but has achieved considerable success under difficult circumstances. The *Comité Interdepartmental* has studied carefully the features of all these establishments and made recommendations based on its studies. It emphasizes the fact that, if the sources of contagion can be reasonably reduced, the need for institutions will diminish, and that with improved facilities for diagnosis and sanatorium care the problem of advanced tuberculosis will lessen. Meanwhile, special hospitals should be provided for this last class in sufficient number.—*Le rôle joué par les Colonies de rééducation au travail dans le traitement de la tuberculose, F. N. K. Menzies, Rev. Belge d. l. Tuberculose, February, 1925, no. 2, 47.*—(*A. P.*)

Antituberculosis Campaign in England.—This cannot be entirely separated from the general scheme of public health and sanitation, of which it is a part and under which the annual mortality from pulmonary tuberculosis has been cut to 75 per 100,000. The structure of Public Hygiene in Great Britain concerns itself with general health measures, unhealthy occupations, infectious diseases, lodgings, milk, water and food, as well as material and childhood prophylaxis, mental and venereal diseases and sanitary inspection. The English tendency is to maintain collaboration between central and local authorities. In 1848 the General Board of Health was created, also local boards, replaced in 1871 by the Local Government Board, and in 1919 a Minister of Health was created. The country is divided territorially into County Councils, County Boroughs, Boroughs, Urban Districts and Rural Districts, in order of importance. The District Councils are the units, and consist of a Committee of Public Health and a Public Health Officer, surrounded by a group of specialized assistants, nurses, visitors and clerks. They also have access to a laboratory and hospital services. The expense is equally divided between central and local authorities. As in other countries, the antituberculosis campaign rests on two factors: (1) prophylaxis and observation in the dispensary, and (2) treatment in hospitals, sanatoria and health inspection, dental and rhinolaryngological clinics, and hospitals. Reporting of tuberculosis is obligatory, and it is possible for the dispensary to keep back of the cases in the district. The first dispensary was founded by Philip at Edinburgh in 1887. In 1911 was passed the Social Insurance Act, which included Sanatorium Benefit. For administering it a capital fund of 1,500,000 pounds was authorized, and the maintenance costs were equally divided between local community and central government. There was also created a Committee on Plan of Campaign. In 1921 an act was passed, specifying the obligations of each territorial division under this act, their plans to be approved by the Minister of Health. To illustrate the workings of the scheme: A school physician discovers suspicious symptoms in a child and reports the case to the M. O. H. who notifies the Tuberculosis Officer. The child is brought to the dispensary and thoroughly examined. If necessary, he is sent to a sanatorium for observation and possibly later to a fresh air school; and the house is disinfected and the parents put in touch with the After-Care Committee, which con-

sists of volunteers but is subject to the discipline of the organization. Certain important establishments deserve mention, the surgical sanatorium for children at Alton and the Papworth Colony, also the Finsen therapy service of Dr. Sequeira at the London Hospital. The sanatoria are reserved for early cases or those under observation. Their constitution is generally simple and they are largely open. It is a question whether they are suitable for cold and rainy climates. Pneumothorax is employed at both sanatoria and hospitals in about 4 or 5 per cent of cases. The sanatoria are also concerned with reëducation and graduated labor: (1) to facilitate autoinoculation, (2) to preserve the patient's morale and dignity, (3) to permit him to assist in defraying his expenses, and (4) to prepare him for a future occupation, if his present one is bad. Surgical tuberculosis is treated in the general hospitals, as well as in special institutions. There are two main schools of thought, one advocated by Sir Robert Jones of Liverpool, who is a surgical interventionist, the other by Sir Henry Gauvain at Alton Sanatorium, which has a marine annex at Heilig Island. Another admirable institution is Queen Mary's Hospital at Carshalton, under Dr. Pugh. At Alton all forms of light therapy are employed, and the children seem to be happy and doing well. Connected with it is a college of reëducation and gymnastic exercises. Queen Mary's Hospital also possesses facilities for physiotherapy and electrotherapy and a remarkable workshop. Finally must be mentioned the Training Colonies and Village Settlement of which there are two models, at Papworth and Preston Hall. They resemble sanatoria in organization, in which an apprenticeship is given in healthful and not too difficult occupations. Their products are sold, but a slight running loss must be expected. The workers are under strict medical surveillance. After a sufficient period of observation, if deemed advisable, the patient is placed, if celibate, in a "hostel;" if married, in a "settlement house," where he can live with his family under ideal conditions. Among the occupations followed are gardening, pig-raising, bee-culture and bird-culture, leather-making, metal-work, watch-making, jewelry-making, and repair of furniture. The work is generally high class. The village also has a church and school. Papworth Colony, the first organized, was created by Varrier-Jones, and Preston Hall is efficiently run by Bonar. England is also occupied with the question of housing, and at Bradford the construction of 1800 new houses is under way. The medical personnel in England consists of both whole-time and part-time men, the former occupying the more important positions. The service is progressive and there is opportunity for advancement with increasing experience. The conclusion is that the British campaign is in efficient hands, well directed and organized, but the lack of provision for childhood protection in the scheme, in contrast to France and Belgium, is pointed out.—*La lutte contre la tuberculose en Angleterre, Denet-Kravitz, Rev. Belge d. l. Tuberc., January, 1925, no. 1, 1.*—*(A. P.)*

Tuberculosis Control in England.—In England the tuberculosis control is under the supervision of the Health Minister. The Ministry works in close coöperation with the school physicians, who are allied to the dispensary. The dispensaries are equipped for all modern examinations, including those for tuberculosis; they are also serviceable for treatment. There is a close coöperation with the practising physician. The sanatorium is one of the main methods of treatment used. Entrance to the sanatorium is not dependent, as it is in Germany, upon the ability of the patient to work, but usually upon the general disease condition. Admission is made possible through the dispensary physician in coöperation with the family physician. Residence in the sanatorium is not limited to three months. The early cases are encouraged to enter the sanatorium while the moderately advanced and severe cases are sent to hospitals and isolation stations. Of the latter there are, by far, not sufficient beds available in England. In the cases not suitable for admission, isolation can be carried out in the home under the supervision of the dispensary physician. In the year 1919–1920 the tuberculosis dispensaries and sanatoria were taken from under the National Health Insurance Act and transferred to the State and the local communities. The expenses were defrayed one-half by the state and the other half by the community. In the year 1923 more than two and one-half million pounds were spent. England has the lowest child mortality and the smallest mortality from pulmonary and laryngeal tuberculosis of any of the industrial states of Europe.—*Die Massnahmen zur Bekämpfung der Tuberkulose in England, R. Güterbock, Ztschr. f. Tuberk., 1924, xl, 112.*—*(H. J. C.)*

Belgian Antituberculosis Measures.—*1. Dispensaries:* These have a chief rôle of social prophylaxis and surveillance, only

occasionally engaging in active therapeusis. From the medical viewpoint, they deal with diagnosis, selection of suitable cases for sanatoria, control of contagion, and observation of latent or inactive cases. A few city dispensaries also have provision for pneumothorax and tuberculin treatment and heliotherapy. From the social viewpoint the visiting nurse is most important. It is through her that information comes as to the moral and material status of the patient and his family, and that other members are sent for examination and young children removed from contagion. She has not only to give advice but to see that it is applied, and the distribution of various forms of assistance is carried on through her. The sympathetic collaboration of the medical profession is also a condition for success. In its turn the dispensary can aid them by facilitating the sending the patients to sanatoria, or by communicating the results of special diagnostic procedures. There are 100 dispensaries in Belgium, all but one organized and managed by the provincial sections of the Belgian National Antituberculosis League. The Province of Antwerp has 10, that at Boom having a solarium and X-ray department; Province of Brabant 15, the principal one being at Brussels; Province of Western Flanders 4; Eastern Flanders 16, the principal one at Gant; Province of Hainaut 17, the central one at Mons; Province of Liége 15, central dispensary at Liége; Province of Limbourg 10, Luxembourg 3, and Namur 10, central dispensary at Namur. *2. Sanatoria:* These are special institutions, where is carried out the treatment generally recognized as most effective for tuberculosis, that based on fresh air, rest and alimentation. To these may be added hydrotherapy, heliotherapy, artificial pneumothorax, and other special measures. Sanatoria for pulmonary tuberculosis are usually located in the woods, plains or mountains, those for lymphatic, osseous and articular tuberculosis on the seacoast. The sanatorium is also a school for prophylaxis and hygienic education. The selection and distribution of patients for the popular sanatoria are done by the dispensaries of the Antituberculosis League, but private physicians may also make arrangements for the admission of their patients. As a general rule, only slightly affected and curable cases are admitted. The popular sanatoria are distributed as follows: Province of Antwerp, 3: two of these are for women and children, with capacities for 144 and 75 beds, respectively; the third, for men, has a capacity of 135 beds. Province of Brabant, 5: the largest, the Sanatorium de la Hulpe Waterloo, takes both sexes and has 240 beds; there is also one of 85 beds at Alsemberg for men, one of 80 beds at Buysinghen for women, one of 83 beds, for boys, at Anderghem, and one of 30 beds for small girls, at Boitsfort. Province of Western Flanders 4: one marine sanatorium of 160 beds, a preventorium, not yet opened, with 350 beds; the Institute Georges Born, for rachitic, convalescent, and exposed children; and a general sanatorium for all types of patients, with a capacity of 175. Province of Eastern Flanders: one sanatorium with beds for 125 women and 32 small girls. Province of Hainaut 2: one for men, with 70 beds, and one for women, named after Edith Cavell, with 52 beds. Province of Liége 4: two of these are under the provincial government, the one, for men, having a capacity of 104 beds, the other, 60 beds for women and 40 for children; there is also a sanatorium for women at Eupen, with a capacity of 125 beds, run by the Belgian National Antituberculosis Association, and a military sanatorium at Marchim-lez-Huy, with 70 beds. Province of Namur, 2, both for children; one at Mont-sur-Meuse, belongs to the Mutual Christian Federation and has 80 beds for pulmonary tuberculosis patients; the other at Salzinnes, founded by Mme. Louise Godin, is a hospital for nonpulmonary cases in children. Belgian Popular Sanatoria in Switzerland, 3: all supported by the Belgian Antituberculosis Association; two are military sanatoria, one for officers and functionaries, with 16 beds, one for private soldiers, with 35 beds. There is also a place at Montana-sur-Sierre for pretuberculous children, as well as those already affected, having 80 beds. Private sanatoria, 3: all maritime sanatoria, located at Coq-sur-Mer (30 beds for adults, 50 for children); Ostende (Institute Helio Marin d'Ostende: l'Hydro, 80 beds), and Ostende (Sanatorium Maritime de St. Vincent de Paul et Institut Delcroix, 150 beds). *Protection of childhood against tuberculosis:* Measures are taken (1) to remove the child from his family environment, where this is a source of contagion, (2) let him grow up in the country among healthy people, and (3) separate him from his family as soon as possible after birth. Both family and collective placement are used, the average cost being a few francs a day per capita. From 1911 to 1920 about 3,000 children were placed. There has been one death from tuberculous meningitis. The following institutions are included: Province d'Anvers, Institut Georges Born, at Wenduyne, 260 beds, price 6 francs a day; Villa des Oyats and Villa Maritime, at Wenduyne, same price: the former has 32 beds, the

latter is temporarily out of use; Province of Brabant, one infantorium, one children's colony, one children's home run by a co-operative society of workmen, and one Sisters of Charity institution. The children are placed by the Oeuvre de Préservation de l'Enfance, with headquarters at Brussels; Province of Hainaut, Villa Pierart and Villa Princess Marie-José, accommodating 80 and 60 children, respectively; Province of Liége, 5 institutions with 460 beds; also 4 dispensaries and in certain cases familial placement. Province of Luxembourg, familial placement only; Province of Eastern Flanders, 6 establishments and several dispensaries. *Colonies for delicate children:* The Oeuvre Nationale de l'Enfance has ten fresh-air colonies, as well as an institute for backward children, with admission offices in each province. The children are kept for three months only. Candidates are proposed by the physicians of the school medical inspection service, the antituberculosis dispensaries, or the "Oeuvre." They must be medically certified as suitable and as free from any contagious diseases, and as belonging to a family with resources below a certain fixed standard. The children are grouped according to age and size, and each group entrusted to the surveillance of a preceptress. The open-air regimen is interrupted only in bad weather, when games are played. Each colony has its physician and nurses, and there is medical inspection of all the children twice a week. These colonies have accommodations for a total of 1,535 boys and girls. There are also 41 other colonies scattered throughout the different provinces, supported by various organizations, which are listed, together with their capacity, the length of stay, the method of admission, the charges (where there are any) and what outfit is necessary. The following institutions have nominal charges: Institut Cardinal Mercier, at Contich, Province of Antwerp; Château de Béthanie, Anderlecht, Brabant; De Keyser's Hoeve, at Santvliet, Anvers; Villa de Mont-Thabor, at Dilbeek, Abbaye Ter-Baucke, at Heverbe, Brahant; Château de Dieleghem, Jette- St. Pierre, Brabant; Château du Grand Air, La Hulpe, Brabant; Convent de Notre Dame du Sacré Coeur, Overyssche, Brabant; Domaine de la Chise, at Pietre-Bais, and Leur Abri, at Rixensart, Brabant; Inst. St. Joseph, at Coxyde, Western Flanders; Hotel des Mutualistes at Heyst; Inst. Notre Dame de l'Yser, at Knocte; Villa Blanche, at La Panne; Inst. de la Providence, at Middelkerke, and Villa Grand Air at Wenduyne, all in Western Flanders; Colony at Russeignies, Eastern Flanders; Établ. du Sacré Coeur et Gratyles-Enghien, Province of Hainaut; Maison St. Edouard, at Stoumont, and the colony at Tribomont-Wegnez, Liége; Villa des Marçunvin, at Hastiere-Parde-La, Namur. *Antituberculosis campaign in the army:* Each recruit receives, on passing before the medical board, a sanitary card, which he returns and on which are entered his physical data, for comparison and record of changes, at the triennial examinations during service. For the treatment of tuberculosis developing in the army there are two military hospitals (at Brussels and Ostend) and three sanatoria, two of which are at Montana, Switzerland. Ex-soldiers, who have contracted tuberculosis during their service and are on the pension list, are also admissible to these hospitals or sanatoria for active treatment. *Antituberculosis campaign in prisons:* A special prison has been constructed at Merxplas for the tuberculous and pretuberculous, where provision is made for fresh air, rest and sunlight. It has a capacity of 110. After discharge these prisoners are invited to call at the dispensaries of the Antituberculosis Leagues, which are furnished with their medical records. This prison sanatorium is considered a most valuable prophylactic acquisition, because of the well known tendency of old tuberculous lesions to become active under ordinary prison conditions.—*L'armement Antituberculeux Belge, Association Nationale belge contre la Tuberculose, l'Oeuvre Nationale de l'Enfance, and la Ligue Nationale Belge contre la Tuberculose, Rev. Belge d. l. Tuberc., August–September, 1924, nos. 8 and 9, 239.*—(*A. P.*)

Report of Belgian National Antituberculosis League for 1923.—The *Comité Directeur* was occupied with a number of questions concerning administration and organization. New dispensaries were opened at Tessenderloo (Limbourg) and Court-Saint-Etienne (Brabant), and the Luxembourg section of the league was reorganized with dispensaries at Arlon, Neufchâteau, and Bastogne. An arrangement was entered into with the federated mutual societies regarding dispensary care and surveillance. The league participated in the International Exposition of Hygiene at Strasbourg. Monthly conferences were held at which specialists addressed them on important topics. The Antwerp section initiated a work similar to the Oeuvre Grancher for placing in special nurseries the newborn infants of the tuberculous. The Hainaut section created an establishment for advanced tuberculosis patients and nurseries for the children of the tuberculous parents are contemplated. The Liége

section organized an Association of Antituberculosis Dispensaries, managed by an administration council of able public administrators, men of affairs and physicians. The *Oeuvre de Preservation de l'Enfance* continued its work toward removing the danger of family contagion. It has cared for 304 children in Brabant at the colonies at Berthem-lez-Louvain and Flobecq and the Pouponnière de l'École Edith Cavell. The good results obtained are dependent on certain conditions: (1) location of the establishment in the country; (2) regular medical supervision, combined with adequate and competent nurses; (3) the use of whole milk from animals free from tuberculosis; (4) rigorous general hygiene, including baths and open air; and (5) careful supervision of parental visits, with change of habit and washing of hands prior to any contact.—*Ligue Nationale Belge contre la Tuberculose, Rapport Général pour 1923, Comité Directeur, Rev. Belge d. l. Tuberc., December, 1924, no. 12, 353.*—(*A. P.*)

Scientific Meeting of Antwerp Section of Belgian Antituberculosis League.—This section has been organized for three years, and at its meetings are discussed problems of general interest concerning tuberculosis. *Paternotte:* If rest, air, alimentation and discipline form the basis of the cure there is, nevertheless, no reason for ignoring other important therapeutic measures. The sanatorium physician should not become stunted and ignore effective measures employed outside sanatoria. There should be facilities for heliotherapy, both natural and artificial, also hydrotherapy. Attention should be paid to readapting patients to work, and to preserving their morale by education, instruction and distraction. *Mutsaerts:* The sanatorium should be equipped as a centre of treatment where all the resources of medical science can be made available. The conditions of application of pneumothorax treatment still need improvement. *Thieren:* The sanatorium laboratory should be capably organized, both for scientific study and for aiding the clinical work. Since the administrative committee, for economy, substituted oleomargarine for butter there has been constant trouble. The patients refuse margarine and scrape it off their bread. Butter has been found to be an ideal form of fat for the tuberculous, is both accepted and digested better than margarine, and is better absorbed by the intestine.—*Réunions scientifiques de la section anversoise de la Ligue Nationale Belge contre la Tuberculose, November 14, 1924, reported in Rev. Belge d. l. Tuberc., by Delhaye, January, 1925, no. 1, 17.*—(*A. P.*)

Tuberculosis in Tropics.—Tuberculosis may not loom very large in the curricula of schools of tropical medicine, but diseases refuse to be localized and assert their right to world wide prevalence, and to this law it is no exception. The features of tuberculosis, as it occurs in the tropics, are more concerned with the inhabitants, with their housing and mode of life, than with climatic conditions. The evidence is overwhelming that, when tuberculosis is introduced into a country hitherto free from it, the natives manifest a degree of resisting power much inferior to that shown by inhabitants of countries in which it has been present for countless generations. During the war, in 2,121 postmortem examinations of British soldiers, who died from wounds or some other accidental cause, obsolete tuberculous lesions were found in 9 per cent. In the Middlesex Hospital, for the periods, 1879–1886 and 1890–1891, the percentages of obsolete tuberculous lung lesions were 9 and 9.4 respectively. Deliberate vaccination with dead or attenuated bacilli is not an advisable means of creating a resistant population. It would be better in every way to improve the physique of the nation, and thus improve the resisting power of the people to disease, including tuberculosis. The fall in the death-rate from pulmonary tuberculosis in Great Britain began before modern sanitary measures had time to operate, and it will be accelerated in that and other countries when governments appreciate to the full that the provision of healthy homes for the people is a matter far transcending in importance any other. The author has seen no case of pulmonary tuberculosis in which it could be definitely said that any good resulted from the administration of tuberculin, but he saw many in which any chance of recovery that the patient possessed had been destroyed by its use. Speaking generally, opinion is not favorable to Dreyer's vaccine. Schutz has in the past nine months tested the therapeutic value of Dreyer's diaplyte vaccine on tuberculous guinea pigs. No evidence whatever has been obtained that the course of the disease in these animals is favorably modified by this treatment. A scheme for a tuberculosis settlement is given.—*Tuberculosis in the Tropics, J. K. Fowler, Lancet, June 13, 1925, ccviii, 1233.*—(*B. T. McM.*)

Tuberculosis in Africa.—Tuberculosis is still very rare among the natives in inland Africa, although there is a good deal of it

in the cities and along the coasts, where it is increasing. Diseased East Indians and Europeans are largely responsible for this. This is a review of the League of Nations report on tuberculosis and sleeping sickness in colonial Africa.—*Tuberculose und Schlafkrankheit in Afrika, Deutsche med. Wchnschr., October 17, 1924, 1, 1450.*—(*H. S. W.*)

Heredity in Tuberculosis.—In an earlier article it was shown that the hypothesis of congenital tuberculosis, in the sense of inheritance of actual infection, is only very rarely tenable. But this fact does not entirely dispose of the heredity question in tuberculosis. Do parents transmit to their offspring special biological aptitudes as regards tuberculosis? Is there a special inherited predisposition of soil? Many authorities accept Landouzy's ideas that the children of the tuberculous have an hereditary tendency to dystrophies, or manifest an hereditary predisposition to the disease, or, at times, an hereditary resistance. The child is always delicate, not only as infant but as an adolescent, and shows the well-recognized stigmata. As adult, if he survives, he displays tendencies to a variety of pathological conditions. The problem presents itself in two aspects: humoral inheritance and cellular inheritance. Present biological studies tend to show that the fetus throughout its intrauterine life is being impregnated by substances circulating in the maternal blood and entering through the placenta, and that these substances persist for a certain time after birth. A variety of nontuberculous antibodies have been found thus to pass through the placenta in both animals and man. Of tuberculous antibodies, agglutinins and complement-fixing bodies have been found to be transmitted transplacentally. The authors present a new series of their own of examinations for complement-fixing bodies. Blood from the umbilical cord was examined in 35 cases: 16 of the infants were from mothers with proved tuberculosis. The sera were positive in 12 of 16 tests. Nineteen sera were from the umbilical-cord blood of infants of nontuberculous mothers. There were now 18 negative results and only one positive. But the blood serum from the tuberculous mothers taken at the time of birth did not necessarily give the same results as the sera of the infants. The following conclusions are warranted from the results of complement-fixation tests: 1. The passage of antibodies from tuberculous mother to child is an established and very frequent fact. 2. This passage is not a simple filtration. The placenta is not a passive organ; at times it arrests the antibodies in whole or in part; again it concentrates them, causing the antibodies to appear in the umbilical-cord blood in larger amount than in the maternal blood, or causing them to appear in the cord blood when they cannot be demonstrated at all in the maternal blood. The placenta plays, therefore, a rôle, not only of retention but also of concentration or activation. This latter rôle has not previously been noted, to the best of the authors' knowledge. 3. The antibodies transmitted by the mother to her infant do not persist in the blood of the latter: their quantity decreases progressively and rapidly during the first eight or ten weeks, to disappear completely about the third month of life. 4. This disappearance of antibodies derived from the mother takes place automatically, which is not in accordance either with a transmitted tuberculous infection or with the presence of a tuberculin reaction. It is not affected by the subsequent appearance of an acquired tuberculous infection; it behaves in the same manner regardless of whether the infant is well or ill, is to live or is to die. 5. In the infant, acquired tuberculous infection does not immediately determine the appearance of tuberculous antibodies: only exceptionally, and after some delay, is the nursling capable of producing these antibodies himself. Proceeding next to the question of transmission of toxic substances from mother to fetus, the authors regard, as insufficiently controlled, conclusions to the effect that certain organs of the newborn, particularly the liver, show degenerations indicative of toxin transmission. They themselves studied 14 infants, newly born of tuberculous mothers and removed from them at birth, either still-born or dying within a few weeks. They examined the livers particularly closely, but found no lesions which could be regarded as due indirectly to poisoning of maternal origin. The last phase of the question is that of cellular inheritance. In the first place, it has not been demonstrated that all the Mendelian laws of hereditary characteristics can be applied to mankind. The laws are based upon a study of animals which beget multiple offspring with each gestation, whereas mankind bears but one as a rule. Secondly, it is, in our daily experience, only the normal characteristics which are transmissible. When the pathological are transmitted, they are of a special type, such as malformations, brachydactylia, obesity and hemophilia,—constitutional states rather than diseases. The tuberculous characteristic is not a constitutional state, and cannot

be regarded as existing except in the presence in the body of the specific bacilli. The sole indication of the tuberculous characteristic is the presence of a positive tuberculin reaction; as a matter of fact, cases of transmission of the tuberculin reaction have never been observed. As for the tuberculizable characteristic, this might be regarded as a constitutional state and thus theoretically be transmissible. But we are now dealing with a vague characteristic of resistance or susceptibility to an infection; no longer is it a tuberculous inheritance. Thirdly, an acquired characteristic can be transmitted only on condition of its becoming dominant. Only a prolonged observation of series of generations would permit one to determine which are the persisting dominant characteristics and which are the transitory recessive ones. The authors' experience with children removed from contagion contradicts the reality of these transmissions. Fourthly, the problem of heredity should be viewed more broadly. From a biological standpoint the effect of the present is nothing compared to the forces of an indefinite past. Heredity is primarily a factor of fixity, a reaction of defense against variations much more than a means of preserving new characteristics. *Différents aspects de l'hérédité tuberculeuse (Deuxième mémoire). L'hérédité de terrain, R. Debré and M. Lelong, Ann. de Méd., June, 1925, xvii, 601.*—*(W. B. S.)*

Predisposition to Tuberculosis.—In a statistical study on Höchst, in which there were 50 deaths, 18 being more carefully analyzed, the conclusions are drawn that there is an increased predisposition during youth between 14 and 25 years, the period of beginning adolescence and puberty in the female. There is a preponderance of women among the fatal and ill cases. There was no apparent family predisposition to tuberculosis. Emphasis is laid upon early diagnosis and immediate treatment of phthisis in the period of puberty.—*Zur Disposition für Erkrankung an Tuberkulose, W. Hagen, Beitr. z. Klin. d. Tuberk., 1924, lviii, 481.*—*(H. J. C.)*

Home Infection in Tuberculosis.—Exposure to contact with infected persons during childhood is a very serious danger against which our best efforts should be directed. Out of 265 patients under fifteen years of age in Cardiganshire, no less than 72 per cent give a history of previous contact with infection, chiefly in the home; and of a total of 569 children with pulmonary disease, 384, or 67 per cent, give a similar history. It is hardly within the bounds of possibility that such percentages are to be found among nontuberculous children of similar age groups; and the figures would appear to demonstrate that the infected home is an extremely dangerous factor in the production of the tuberculosis of childhood, adolescence and later life. Tuberculous persons are the one great source of danger in the spread of tuberculosis. They should be converted into the front-line troops in the antituberculosis campaign, accepting, as soldiers should, the discipline, the self-abnegation, the constant vigilance exacted from them as the price of victory. —*Home Infection in Tuberculosis and How to Neutralize Its Dangers, S. L. Cummins, Brit. J. Tuberc., April, 1925, xix, 65.*—*(B. T. McM.)*

Pregnancy and Tuberculosis.—For many years the question of the effect of pregnancy and its interruption on tuberculosis, which is of great practical importance, has been discussed. Most authors assume a generally baneful influence, but they are much more divided on the question of the benefits of interrupting the pregnancy. At the International Gynecological Congress at Rome in 1902 only one or two discussed this subject rather briefly. Between this time and the beginning of the World War, especially in Germany, interest was stimulated, as numerous statistics were published showing for the most part an enormous mortality in pregnant tuberculous women, during pregnancy, parturition, and the puerperal period. That pregnancy exerted an unfavorable influence became almost an axiom and the question of chief concern was, what to do about it? The "individualists" could not boast of any brilliant results, and the probability of aggravation of the tuberculous process seemed to many sufficient to justify therapeutic abortion as a general procedure. There was also thought to be an increased mortality of children born of tuberculous mothers during their first year. Radical abortive procedures, however, yielded disappointing results; hence, some incriminated the puerperal period and advocated such measures as hysterectomy and sterilization. The frequency of radical procedures led Brockelmann, in 1911, to declare that they recalled to him the "bloody epoch" of gynecology. During this phase, discussion of the subject was chiefly of surgical technique, although a more moderate opinion was represented by Kehrer, of Dresden, who has recently advocated: in latent cases, careful observation; likewise, in nonprogressive stage I (Turban) cases; in stage II cases, interruption of pregnancy; in advanced

cases, noninterference, because little or no benefit is likely. That even in Germany opinion was not unanimous is shown by the statement of Menge, of Heidelberg, at the Munich Congress in 1911, that our knowledge of this subject is a veritable chaos. In the Scandinavian countries the majority of experienced obstetricians are now inclined to conservatism, or at least individualization (for instance, Rode, Lindhagen, Petersen, and Albeck). In the United States the most complete statistics are those of Norris, who, finding the course of pulmonary tuberculosis less favorable in pregnant women, recommends therapeutic abortion. Although this view is quite generally supported, Flick, West, and Walsh disagree. In France abortive procedures have less support, although most gynecologists agree that the reproductive process may arouse inactive or latent tuberculosis. It has been recommended that pregnant tuberculous women be cared for in sanatoria and maternity wards be provided for their accouchement. There are really three questions involved: 1. Does pregnancy exert, as a rule, a harmful influence on pulmonary tuberculosis, or in what kind of cases? 2. What consideration should be given to the children? 3. Does interruption of the pregnancy improve the patient's chances of resistance or survival? Regarding the first question, most of the available statistics come from obstetrical clinics, whose personnel are not skilled in the diagnosis of tuberculosis, and for this reason are likely to include chiefly serious or advanced disease, the slighter cases being overlooked. In such it is very difficult to say whether any aggravation of the tuberculosis observed is *post hoc* or *propter hoc.* Nonpregnant controls under similar conditions are scarcely available, and the fact that tuberculosis, with or without pregnancy, is a serious and frequently progressive disease, is commonly ignored. In Norris's study, already referred to, the difference in mortality be ween the two groups was not over 10 per cent in favor of the nonpregnant, and his figures indicate that there were fewer cases of advanced disease in this group. In the study by Pankow and Kupferle, of Leipzig, where intervention was practised in all cases of manifest tuberculosis, nevertheless, the eventual mortality was 56.8 per cent, and aggravation was estimated to occur in 94.5 per cent, based on clinical observation and subjective symptoms. At Krönig's clinic at Freibourg, where interruption is also the rule, 37 of 145 patients did not have it done till the end of the fourth month, and the mortality within five years was the same as in Pankow and Kupferle's study. Bernard, in France, from personal observation of 327 pregnant patients, concludes that there is an even chance of aggravation of the disease. Weinburg and van Tussenbrock have found that the mortality within a year after the accouchement differs little from the general mortality in tuberculosis. A comparison has been made by Runborg and Sundburg, in Sweden, of the mortality in married and celibate tuberculous women, but here social and economic conditions also differ; furthermore, in Stockholm, 30 per cent of children are born out of wedlock. Forssner's first study, published in 1917, was based chiefly on the literature available, and led him to conclude that proof was lacking of the so generally accepted axiom concerning the baneful effect of pregnancy on pulmonary tuberculosis. A study of tuberculous women cared for in the Stockholm dispensaries, with an attempt to compare the pulmonary condition of those who became pregnant during observation and those who did not, was inconclusive. Aggravations and relapses are so common in the course of tuberculosis that it is only those occurring during pregnancy, or within a month after parturition, that can justly be said to be related to these conditions, and even then there is the possibility of mere coincidence. Forssner has more recently, with the aid and coöperation of the Swedish National Antituberculosis League, been able to carry out more extensive investigations. The out-patients of two large maternity institutions of Stockholm, coming to the clinics for preliminary advice, were carefully examined by trained experts in tuberculosis. Out of over 30,000 women, about 1,500 were referred to dispensaries because of manifest or suspected tuberculosis and their course carefully followed prior to and for two years after their accouchement. For comparison or control, Sundell and Forssner gathered the data covering several years of the Dispensary of the South of Stockholm, concerning all women between 17 and 40 years of age who had not passed through pregnancy during observation or within a year after discharge. Cured cases were excluded. This group then comprised 396 women. Both the pregnant and nonpregnant groups were subdivided according to the stage of the disease. It is admitted that the maternity group, thus selected, is more apt to contain inactive or chronic torpid cases, hence a third table is prepared in which all such cases, as determined by prolonged careful observation, have been excluded, and only those showing bacilli or undoubted evidence of activity included. Even so, the tables show less than 10 per cent difference between any two comparable groups, this difference

being chiefly in the stage III cases. Taken altogether, the figures speak strongly against pregnancy having exerted a pernicious influence. Apropos of the second question, of the future of the child, the mean weight of the children of the tuberculous group at the maternity institutions averaged as much as that of a normal group. The importance of removal from contact infection is shown by the following: Of those children removed at once from their tuberculous mothers 82 per cent were living and well after three years, and 6 per cent had developed tuberculosis or died of it; of those cared for by their mothers, 52 per cent were living and well, and 45 per cent developed or died from tuberculosis. The third question of the influence of interrupting pregnancy is partly answered by reference to the statistics of Pankow and Kupferle and of Krönig's clinic. No proof has been furnished that abortion checks the active evolution of the tuberculous process; the results in stages II and III have not been satisfactory, while stage I cases generally go through pregnancy and labor without harm. Hence, the occasion for inducing abortion should be rare, especially so if the child is taken into consideration.—*Les relations entre l'état de gestation et le tuberculose, H. Forssner, C. Sundell and G. Kjellin, Conférence internationale contre la tuberculose, Lausanne, August 5–7, 1924, reported in Rev. d. l. Tuberc., December, 1924, vi, 730.*—(*A. P.*)

Conjugal Tuberculosis.—The classical view today of adult tuberculosis is that it most frequently results from superinfection (or reinfection) of an organism already infected in childhood and partially immunized. The superinfection may be of exogenous origin, by contagion from without, or endogenous, having its source in a latent bacillary focus which has existed since childhood. Phthisiologists are not entirely in accord as to the relative importance of these two modes of superinfection, and therefore as to the best prophylaxis. The endogenous origin is most favored by Bezançon, Marfan, Roemer, Hamburger, Ranke, Fishberg and Baldwin, among others. Among those who believe exogenous sources to be more important are Roger, Sergent, de Krux, Aschoff, Reiche, Hayek and Beitzke. Bernard believes we lack the necessary elements to come to a final conclusion. The incidence of tuberculosis in conjugal partners of the tuberculous would be an important bit of evidence if the records were reliable and complete, which unfortunately they generally are not. Hence, according to some, conjugal tuberculosis is very rare; according to others, almost the rule. The partners of individuals with pulmonary tuberculosis are certainly as intimately exposed to contact infection as one can imagine. Arnould has made up a table covering the essentials of 48 statistical studies made between 1872 and 1924 by 39 authors in 9 different countries. The total covers about 53,000 households where tuberculosis occurred, and among these there were 4,473 cases in which husband and wife were both affected. Not all of these statistics are of equal value. The percentage of cases in which both partners were involved ranges from 2.2 per cent (Barnes, United States) to 5.8 per cent (Ward, England). Such a discrepancy must be ascribed to the methods of investigation and the diagnostic criteria. Sanatorium statistics are at fault in that their information is generally based solely on the history. Arnould, after a careful examination of the sources of information, concludes that the tuberculosis morbidity of the partners of the tuberculous approximates 10 per cent. One must next seek the tuberculosis morbidity of other individuals of similar age for comparison. In the United States recently the general tuberculosis morbidity of the little town of Framingham was estimated at 2 per cent and the mortality 0.1 per cent per annum. Figures for Sweden and Finland indicate a morbidity of about 2.5 per cent for the general population. If investigation is limited to the urban population between 20 and 50 years, however, a higher morbidity is found, which may be estimated at 5 per cent. This is based on figures from France, England, Germany, Holland, Sweden, Switzerland and the United States. Thus, the consorts of the tuberculous are affected to about twice the ordinary extent. Studies have been made by Pégurier at Nice, Minnig at Denver, De Besche and Jorgensen at Christiania, which show a smaller difference, only between 25 and 50 per cent greater morbidity among the consorts of the tuberculous. Weinberg at Stuttgart, has investigated the deaths from tuberculosis among 3,932 consorts in the period 1873–1902, which totalled 230, and compared the deaths among both widows and widowers with those of corresponding age in the general population. He found that the widowers actually showed a lower mortality than other men, by about 25 per cent, while the widows exceeded this general mortality by 50 per cent. He explains this on social and economic grounds, the widowers suffering fewer hardships than the widows and often remarrying, which is seldom the case with the widows. Thus it is seen that there is very little excess morbidity or mortality among the consorts of the tuberculous, and

it may be concluded that the intimate degree of contact plays surprisingly little part, as a general rule, at least in the urban population. It is, therefore, concluded that exogenous superinfections received during adult life play a very slight clinical rôle.—*La tuberculose dite conjugale et la contagion tuberculeuse chez les adultes, E. Arnould, Rev. d. l. Tuberc., March, 1925, vi, 177.*—(*A. P.*)

Valvular Heart Disease and Pulmonary Tuberculosis.—Since Rokitansky's observations that certain cardiac conditions were protective against subsequent pulmonary tuberculosis, there have been numerous observations of a contrary nature. Aside from the pathological consideration of the subject, the diagnostic pitfalls resulting from clinical observations are considered. The subject is also divided into the occurrence of the pulmonary disease before the incidence of valvular changes and the development of tuberculosis on an existing valvular condition. It is concluded that a valvular condition by no means produces a complete protection against the development of a subsequent pulmonary tuberculosis. The question of whether individuals with valvular disease develop pulmonary tuberculosis less commonly than otherwise occurs could not be determined, on account of the lack of satisfactory material. The cases in which pulmonary tuberculosis followed the valvular condition were very much in the minority in the material under investigation. If a cardiac insufficiency is not protective against the development of the disease, the question might be asked whether it has an influence upon the course of the disease. Here the complication appears that tuberculosis itself assumes an extremely variable nature, and this is also noted in cardiac conditions. It appears, however, as far as this can be interpreted, that in some cases the valvular condition exerted a favorable influence upon the tuberculosis; in others, again, no appreciable effect was noted; while in a third group of a severe type of tuberculosis the cardiac condition had an unfavorable effect. —*Über den Einfluss von Herzklappenfehlern auf Lungentuberkulose, H. Gödde, Beitr. z. Klin. d. Tuberk., 1924, lvii, 329.* —(*H. J. C.*)

Tuberculosis Mortality and Economic Condition.—In the years 1911–1913 the tuberculosis mortality was 394 in Paris and 171 in London per 100,000 population. That for Berlin was not given. Hersch determined a mathematical relation between tuberculosis mortality and social status in Paris, there being a constant value between poverty and tuberculosis mortality. Stevenson found no such relation for London, and in Berlin the same holds true. A mathematical relationship between poverty and tuberculosis mortality in the larger cities could not be determined, although it seemed apparent. There are many factors involved in this problem, such as the occupation, living conditions, abuse of alcohol, etc., which are all determining factors in the relation between social status and tuberculosis.—*Tuberkulosesterblichkeit und Wohlstand in Paris, London und Berlin, G. Wolff and K. Freudenberg, Zeitschr. Hyg., 1924, cii, 377.*—(*H. J. C.*)

School Teachers with Open Tuberculosis.—An investigation was made of a class (38 children) under a teacher with open tuberculosis, to which the children were exposed for four months, and the infection compared with that of four parallel classes of children. The findings indicated that the open case of tuberculosis is dangerous only for a short distance beyond the actual individual contact; and there was only slightly more infection (14.4 per cent) of the children in the class over which the teacher with open tuberculosis presided.—*Die Klasse der offentuberkulösen Lehrerin. Ein Beitrag zur Epidemiologie der Tuberkulose, O. Geissler, Beitr. z. Klin. d. Tuberk., 1924, lviii, 492.*—(*H. J. C.*)

Spread of Tubercle Bacilli in Body.—There is no pathological or anatomical evidence to support the idea that a tuberculous focus in the mesenteric or cervical lymph nodes acts as a primary focus from which pulmonary localization of the infection arises. Tubercle bacilli are frequently taken in through the gastrointestinal tract, but many of these are carried through, or are confined or killed off in the mesenteric lymphatic apparatus, and for this reason there is a preponderance of primary foci in the lungs. But many times it is impossible to determine where the bacilli that infect the lungs come from. Certainly the mere presence of tuberculous infection in the lung is insufficient evidence of an aerogenous origin of the infection. Where conjunctival, nasal or mouth infections result only in swelling of the regional lymph nodes, but are followed by caseous tuberculosis of the lungs and tracheobronchial nodes, as some claim to be the case, no consideration is given to the possibility of an aspiration infection, and the question of cervical or other lymph-node origin of pulmonary tuberculosis is not proved. Authors have claimed that the passage of tubercle bacilli through

mucosal surfaces alters virulence.—*Ueber einige Gesichtspunkte zur verbreitungsweise der Tuberkulose, H. Beitzke, Deutsche med. Wchnschr., May 22, 1925, li, 849.*—(*H. S. W.*)

Cutaneous Route of Infection in Pulmonary Tuberculosis.—It was demonstrated by Campani and Grossi in 1923 that in 24.5 per cent of cases of pulmonary tuberculosis, traces of previous pyogenic cutaneous infection were found, especially in the form of furuncles on the neck. Additional observations on this same series showed that in 67 per cent of cases with previous cutaneous infection the pulmonary disease was on the same side as the original skin lesions, which was almost always on the neck or upper part of the body. Hypotheses to explain this feature are that there is congenital weakness or asthenia of one side, or that the cutaneous pyogenic infection has been the direct portal of entry of the tubercle bacillus. For further support of the latter view, additional statistical study was made of 300 cases of pulmonary tuberculosis for evidence of previous cutaneous pyogenic infection, not only from spontaneous infection but from septic wounds. This revealed 72 cases that had had furuncles or anthrax, 21 phlegmons, 87 septic wounds; 180 in all, or 60 per cent. The coincidence with the side of the thorax first affected by tuberculosis was 78 per cent in the group of septic wounds and spontaneous infections, while in aseptic wounds (contusions, fractures, amputations) it was 59 per cent. In the majority of cases the skin affection occurred on the neck or upper extremities. It is felt that these figures indicate that the cutaneous infection caused an alteration in the lymphatic tract, opening the way for the tubercle bacillus. It is thought unnecessary to search for the portal of entry by inhalation or ingestion when this route is open through the extremely prevalent skin infections, and since there is no reason to deny that the tubercle bacillus may enter through a pyogenic lesion, especially when one considers the widespread distribution of the bacillus and the frequency of exposure to a tuberculous member of a family. Though little research has been done to establish the fact that pyogenic infection affords an ideal condition for the tubercle bacillus, this is felt to be true, and an experiment by Arloing and Nicola is cited in which rabbits previously infected with streptococci developed rapidly advancing tuberculosis. In the matter of determining the side primarily affected, in cases not obviously unilateral, careful observation shows the initial infection to be on the side which is constantly the worst, except when a previous exudative pleurisy has afforded such protection that the tuberculosis becomes most marked on the opposite side. This is considered so in spite of the well known primary X-ray lesion with its corresponding hilum changes. If inhalation is so frequently the mode of infection, why does not the phthisiologist become infected more often. The explanation is thought to lie in the fact that the physician is more careful to cleanse his skin and so keep infection from it. The inhalation and ingestion theories are not denied, but the cutaneous route is held as a fertile source. Antipyogenic vaccines were used in the treatment of certain cases with good results. In conclusion, these statistics substantiate those previously published, as indicating the frequency of previous cutaneous infection in pulmonary tuberculosis and, in addition, owing to the frequency of the coincidence of the side of the tuberculous lesion and the cutaneous lesion, should lead one to think of a direct causal connection between the two.—*La voie cutanée d'infection dans la tuberculose pulmonaire, est-elle la voie predominante? A. Campani, Presse Méd., April 15, 1925, no. 30, 482.*—(*E. H. K.*)

Tuberculosis of Infants and Children.—To figure the percentage of tuberculosis among nurslings from the number of open cases of tuberculosis among associates and the duration of life of those ill is erroneous. In a limited circle one-half of the exposed children remained free from tuberculosis clinically. The mortality of the infected children was 66 per cent, and the tuberculosis mortality of the nursling lies preeminently in the sixth to sixteenth months. Small children and nurslings must be, as far as possible, removed from the source of infection. After the second year this measure loses in significance, since the chance of life is much more favorable. The question of whether all children infected with tuberculosis show symptoms remains unanswered.—*Über Verbreitung und Heilungsaussichten der Tuberkulose bei Kindern bis zu 4 Jahren, F. Kreuser, Beitr. z. Klin. d. Tuberk., 1924, lviii, 500.*—(*H. J. C.*)

Tuberculosis in Children.—The bovine tubercle bacillus is the cause of a large percentage of tuberculous adenitis and of abdominal tuberculosis in younger children, the incidence decreasing with the increasing age of the child. Pasteurization of milk is an important factor. Most pulmonary tuberculosis is brought about by bacilli that have been inhaled into the lungs but (if

resistance is good) the infection may be halted. Or, if the body be weakened through intervening disease, the process may spread lymphatically to the hilum or hematogenously over the body. Diagnostic aids are tuberculin tests, complement fixation, animal inoculation, X-ray, clinical examination, etc. The disease may be found as miliary, pulmonary, hilum, lymphatic, peritoneal, cutaneous, meningeal, etc. Treatment should be preventive as well as curative.—*Tuberculosis in Children, S. Wetchler, Arch. Pediat., May, 1925, xlii, 324.*—*(H. S. W.)*

Pulmonary Tuberculosis in Children.—The more pulmonary tuberculosis is looked for in infants and children, the more frequently it will be found. Absence of mortality does not imply absence of infection. The authors review 89 cases of proved pulmonary tuberculosis in children, nearly all the cases being in a moderately advanced stage. They have also carefully investigated 200 other cases, definitely diagnosed as pulmonary tuberculosis, though proof was not obtained either by autopsy or by the finding of tubercle bacilli in the sputum. Many of this latter group showed the vague signs and symptoms found in the proved cases, such as lassitude, evening fever, failure to gain weight, paroxysmal cough, d'Espine's sign, paravertebral dulness, etc. The authors also report 90 cases of pleural effusion in children under 15, the fluid containing an excess of small lymphocytes, and, in one case only, tubercle bacilli. Admitting the difficulty of positive diagnosis, the following symptoms and signs are of great assistance: "croupy" cough at night; vague ill-health; evening fever; loss of weight; evidence of tracheobronchial lymph-node enlargement (though this is by no means necessarily tuberculous); localized râles. Sputum should always be examined if obtainable; if not, the feces should be searched for tubercle bacilli. X-ray examination should always be made, but is often of very little help. The authors present an exhaustive analysis of their 89 cases of proved pulmonary tuberculosis (between the ages of 3 and 14). No miliary cases were included. Thirty-five were improved, 19 unchanged, 6 discharged worse, 27 died, and 2 are still in the hospital.—*Pulmonary Tuberculosis in Childhood, F. G. Chandler and T. W. Preston, Brit. J. Child. Dis., January–March, 1925, xxii, 1.*—*(P. J. W.)*

Pulmonary Tuberculosis in Children.—From a study of the literature, and of two series of cases (one of normal children and one of malnourished, "potentially tuberculous" children), the author concludes that tuberculosis is not as frequent or as fatal in children as it is commonly thought to be. If it is of the hilum type, a complete cure is to be expected if proper treatment (rest, fresh air, proper diet, codliver oil, etc.) is instituted. The largest and most important group consists of undernourished or potentially tuberculous children, many of whom have been erroneously considered to be tuberculous. Reference to this classification, the result of observation on a series of cases, has previously been absent. Our efforts should be directed toward caring for this class.—*Pulmonary Tuberculosis in Childhood, A. J. Bell, Arch. Pediat., February, 1925, xlii, 82.*—*(P. J. W.)*

Primary Tuberculous Foci in Infants and Children.—The contribution brings evidence to bear on the conception of Ghon of past years, as verified also by his coworkers. The report covers 606 cases which are divided into 3 groups: (1) one case in which the changes of a primary complex were not found anatomically; (2) twenty-four cases in which the changes in the sense of the primary complex were determinable anatomically but in which a definite point of entrance remained undetermined. The remainder, or 581 cases, were in group (3), in which the changes in the sense of the primary complex from the standpoint of the portal of entry were determinable. Primary pulmonary infection is predominant. Next in importance is intestinal infection, that of the head and neck region being subordinate.—*Zur Frage über die Häufigkeit der primären pulmonalen und extrapulmonalen Tuberkuloseinfektion beim Säugling und Kind, A. Ghon and F. Wintermitz, Ztschr. f. Tuberk., 1924, xxxix, 401.*—*(H. J. C.)*

Incubation Period of Tuberculosis in Children.—The studies were carried out in an attempt to determine the incubation period of tuberculosis in the child. This period is determined, in the first place, as the time between the day of infection and the day of first appearance of a positive tuberculin reaction. In three cases the latter occurred at about the same time, between the 52nd and 54th days. In the literature there are described a number of cases of infection in the nursling, the average being about 56 days, with a variation of from 8 to 12 weeks. In older children described in the literature the incubation period appears to lie between 6 and 13 weeks. Material differences in the development of the tuberculin susceptibility in the nursling and the older child do not occur. This justifies the conclusion that in the majority of cases of

tuberculous infection about the same infecting dose is being dealt with. The author does not believe that there are marked differences in the infection dose in children, so that it does not appear justifiable to speak of massive and less massive infection in children.—*Die Dauer des Inkubationsstadiums der Tuberkulinempfindlichkeit beim Kinde als Masstab für die Massigkeit der Infektion, E. Breckoff, Beitr. z. Klin. d. Tuberk., 1924, lviii, 337.*—(*H. J. C.*)

Physique of Children of Tuberculous Parents.—Numerous tables of body weight and length and chest circumference are given, contrasting the measurements of children with a family tuberculous taint (children whose fathers, mothers or both parents had died of tuberculosis) as against those without such history. The children with a tuberculous taint were a little below the average weight of normal children of the same station in life, but in all other respects were, if anything, a little above the average. —*Über die körperliche Entwicklung tuberkulosebelasteter Kinder, J. Peiser, Monatsch. f. Kinderhk., May, 1924, xxviii, 146.*—(*T. C. H.*)

Percussion of Lungs in Children.—Axillary dulness is noticeable in tuberculous children only up to six or eight years. Scoliosis and thoracic anomalies may cause this phenomenon to be present. Arkawin claims that it is a specific and constant finding in juvenile tuberculosis. But dulness may be found in different situations. Hilum involvement may not be found in axillary dulness. Axillary dulness does not seem to be present sooner than the positive tuberculin reaction. It is much more rare than d'Espine's sign, but is more decisive. It is absent in adults. For this percussion both arms should be held horizontally.—*Ueber die Perkussion der Lungen bei Kindern, Stargardter, Deutsche med. Wchnschr., March 6, 1925, li, 400.*—(*H. S. W.*)

Fornet's Serum Diagnosis of Active Tuberculosis in Children.—Fornet's diagnostic agent for tuberculosis consists of an emulsion of whole tubercle bacilli which have been freed from their waxy capsule by treatment in ether vapor. According to Fornet, the tubercle bacilli in the mixture are agglutinated (precipitated?) by the serum of tuberculous individuals in dilutions of 1–500 or more. Normal adults show an agglutination titre of 1–60 or 1–80, and reactions with dilutions of 1–100, or greater, indicate active tuberculosis. The present study was carried out on 31 children, 8 being infants, and 23 between the ages of two and fourteen years. Four infants without tuberculosis had titres of 1–20 or 1–40, whereas 4 older children with negative tuberculin tests showed titres of 1–60 or 1–80, and in one instance doubtful at 1–100. Four older children with positive tuberculin tests, but clinically normal, reacted to dilutions between 1–60 and 1–80. In 19 children with active tuberculosis 12 showed titres of 1–100 or higher (3 infants and one older child had values of 1–100, 6 reacted at 1–120 and 2 at 1–200). In the remaining seven cases, the titre was under 1–100, three reacting at 1–80 (a case of cervical adenitis, one of "scrofula" and one of bronchial lymph-node tuberculosis with tuberculosis). Three of the 4 other cases had titers of 1–40, 1–60 and 1–60 respectively (two cases of meningitis and one of miliary tuberculosis, all with weak tuberculin tests). The last case, an infant with tuberculous meningitis, had the lowest titre of all, 1–10.—*Zur Serodiagnostik der aktiven Tuberkulose, W. Hellmann, Jahrb. f. Kinderhk., May, 1924, cvi, 1.*—(*T. C. H.*)

Fornet's Serum Diagnosis of Active Tuberculosis in Children.—The sera from 8 children with active or latent tuberculosis of the lungs or other organs, as well as two sera from children with myxedema and purpura hemorrhagica, were tested by Fornet's serum method. They all reacted negatively to tuberculin, and all gave positive agglutination to a dilution of 1 to 100, including the control serum. The Fornet method was, therefore, considered valueless.—*Zur Frage der Tuberkelbacillenagglutination mit dem Fornetschen Diagnosticum, K. Ossoinig, Beitr. z. Klin. d. Tuberk., 1924, lviii, 236.*—(*H. J. C.*)

X-Ray Evidence of Tuberculous Pulmonary Infection in Exposed Children.—Ninety children, who had been intimately exposed in early childhood to active parental tuberculosis, were examined roentgenologically a number of years later in order to determine how many had contracted the disease. Calcification, as demonstrated in the roentgenogram, was taken as the expression of a once anatomically active tuberculosis, since the deposition of calcium takes place only after tissue has been destroyed. It was found that children so exposed in early childhood regularly showed calcification in the region of the primary infection. Prognosis seemed to depend more on the ability to overcome severe first infections than on the fact of relatively slight exposure. Calcification takes place slowly, for, although exposure may have occurred in infancy, such lesions are seldom found

before the fourth year. However, the repeated occurrence of multiple calcified nodules illustrates the child's resistance as well as the serious significance of superinfections. This study emphasizes the importance of protecting young children against familial tuberculosis, even though infants have more resistance to this infection than was once supposed.—*Die Darstellung der Beziehungen zwischen tuberkulöser Infektion und Exposition im Röntgenbilde, H. Lanzer, Ztschr. f. Kinderhk., January, 1925, xxxix, no. 1, 60.*—(*T. C. H.*)

X-Ray Treatment of Tuberculosis in Children.—X-rays apparently have the property of influencing the granulation tissue about a focus of tuberculosis by hastening the formation of a hard connective tissue about the lesion. It seems probable that the giant cells are also stimulated in such a way as to increase their phagocytic action on tubercle bacilli, thereby offering material aid in the healing process. The tuberculous process occurs usually in one of two forms, the exudative type in which there is the formation of an exudate and tendency to cheesy degeneration, and the productive form with cellular infiltration, connective-tissue formation and healing through the production of scar tissue. It is the latter type, which especially lends itself to roentgen therapy. Since improper concentration of the ray is either ineffectual or capable of causing a flare-up of the focus, with perhaps a general miliary tuberculosis as the end result, it is important to use the proper dosage. For this reason pulmonary lesions had better be treated in the hospital, although bone, lymph-node, skin and joint tuberculosis may be treated in the dispensary. The effect of the therapy is manifested by the diminution of fever, lessening of sputum and catarrhal signs in the lungs, subsidence of swelling in lymph-nodes or joints, deposition of calcium in the bones, or disappearance of exudate in the peritoneal cavity. In 1921–1922 there were 400 children under twenty years of age treated in this manner. The site of the lesion was in the lungs or hilum in 26, lymph nodes in 270, bones in 34, joints in 42, skin and soft parts 16, and elsewhere in 12. In the hilum cases the rays, of medium hardness, were applied to two small areas (8 x 8 cm.) each on the right and left sides of the sternum and on both sides of the spine, with a 5 mm. aluminum filter. At each session two fields were rayed, treatments being given every two days for eight days, and repeated when necessary four to six weeks after the last exposure. No severe reactions were noticed, though certain children showed slight temperature elevations and increased cough for a few days. Then the appetite increased, cough diminished, breathing became freer, and the temperature subsided. The best results, however, were seen in lymph-node tuberculosis, especially those in which caseation had not occurred. At first the nodes may swell a little more; then they become smaller and discrete, and shrink to the size of a pea. When fluctuation is present, roentgen therapy is preceded by aspiration, but here, too, the results are excellent. Softer or harder rays were used according to the depth of the lymph node, at a distance of 23–30 cm., with a 2–5 mm. aluminum filter and a dose of $\frac{1}{3}$–$\frac{1}{4}$; rarely $\frac{1}{2}$, Holzknecht units. Treatment was repeated in two to six weeks, cure being effected after five or six treatments. Of the 270 cases of adenitis treated, 192 were simple hyperplasias and 78 had broken down or showed fistulas. Of these, 194 were completely cured, 51 improved, and the others lost sight of. Only 16 recurrences were noted. In the treatment of bone and joint tuberculosis, roentgen therapy proved itself one of the most important and successful factors in the conservative therapy. The younger the patient, and the smaller the bone or joint, the better the result, and lesions of the upper extremity responded better than those of the lower limbs. Of the 76 cases, 24 were cured and 18 showed steady improvement. Skin and peritoneal tuberculosis showed an equally satisfying result. It would seem that the roentgen therapy of tuberculosis is long past the experimental stage and one of the most valuable methods we have.—*Über die Röntgentherapie der kindlichen Tuberkulose, A. Weisz, Jahrb. f. Kinderh., April, 1924, civ, 365.*—(*T. C. H.*)

Diagnostic Value of Tubercle Bacilli in Stools of Children.—The author studied 100 cases bacteriologically, using the following method: An ounce of stool substance (method of Bezançon and Jong) is mixed thoroughly with a 25 per cent salt solution, to form a semiliquid emulsion. The material is filtered through sterile gauze into two centrifuge tubes, shaken very thoroughly with 2 cc. of ether, and centrifugated. The small layer containing the bacilli is found just beneath the ether-level. The 70 negative cases were clinically as follows: 18 clinically diagnosed as closed pulmonary tuberculosis; 12 tracheobronchial adenopathy (X-ray diagnosis); 10 bone and lymph-node tuberculosis; 4 moderate anemia; 3 tuberculous peritonitis; 23 various disorders, such as pneumonia, heart disease, etc. The 30 positive cases were all cases of pulmonary

tuberculosis, including 6 cases complicated by intestinal tuberculosis. In these 30 cases, the sputum was positive in 18 and negative in 12. In other words, in children with clinically known pulmonary tuberculosis, the results of stool and sputum examination agreed in 60 per cent of cases; while in 40 per cent of the cases the sputum was negative and the stool positive. From his own observations and those of others, the author concludes that tubercle bacilli are not found in the stools of well children; that in the presence of intestinal symptoms and in the absence of pulmonary lesions, the finding of tubercle bacilli in the stools confirms the diagnosis of tuberculous ulcers of the intestine; that, when the sputum is positive in cases of open pulmonary tuberculosis, the stools are also positive in 100 per cent of cases; and that the absence of tubercle bacilli from the stools of children with pulmonary foci, or with clinical evidence of intestinal ulceration, proves nothing. —*De la valeur diagnostique des bacilles de Koch constatés dans les selles des enfants, W. Mikulowski, Arch. d. Méd. d. Enf., April, 1925, xxviii, 201.*—(*P. J. W.*)

Erythema Nodosum in Children.—That erythema nodosum is occasionally due to a tuberculous bacillemia, Weber considered practically proved in a previous article (*Brit. J. Child. Dis.*, 1924, *xxi*, 119). But why a tuberculous bacillemia should in a few cases give rise to erythema nodosum and not in others can only be explained by presumed differences in local susceptibility ("soil"), differences in the virulence of the bacilli, etc. Temporary conditions of tuberculous bacillemia are doubtless much more common than is even yet supposed, and the natural resistance of the body at the time is often sufficient to overcome the bacillary invasion. The source of the bacillemia may be some latent, imperfectly encapsuled tuberculous focus,—for instance in lymph nodes.—*A Further Note on Erythema Nodosum, F. P. Weber, Brit. J. Child. Dis., April–June, 1925, xxii, 133.*—(*P. J. W.*)

Phlyctenules in Children.—There is a great body of opinion that phlyctenules are due to tubercle. Pirquet and Fuchs support this view, and an eminent ophthalmologist notifies every phlyctenular child as a case of tubercle. Savin and Preston examined carefully a series of 50 consecutive unselected cases, 22 of which were in the initial stage with lachrymation and slight pyrexia which, however, subsided in a few days. The average age was 10½ years. The Pirquet reaction was positive in 18 of 24 cases tested. The chest findings were apparently normal in 44, doubtful in 6. The lymph nodes in 28 instances appeared normal, and were enlarged in 21, only 5 of whom were considered tuberculous. Of 383 living relatives of the 50 families, 9 members had tuberculosis, and, of 129 dead 24 had died of tuberculosis. In 9 instances others in the family had phlyctenules. The investigations were started under the conventional impression as to the relation of phlyctenules to tuberculosis, yet it was soon found that in many phlyctenular children there is neither clinical nor laboratory evidence of tubercle. Bruns found the ophthalmic reaction negative in 37 of 40 children with a negative Pirquet. Another feature of phlyctenular conjunctivitis which differs entirely from tuberculosis is its marked seasonal variation, with the highest peak in May and the lowest in August. Again, tubercle is no respecter of classes, phthisis being found in every social order, while phlyctenular conjunctivitis is a disease of the hospital class and those living under poor hygienic conditions. The more children are overcrowded the more predisposed they are to phlyctenules. In the 9 cases in which others of the family had the same condition the average was over 2 persons to each room. On the other hand, phlyctenular disease is seldom seen in Harley Street. While there were 33 instances of tuberculosis in 512 relatives of patients, among 448 relatives of 50 normal controls there were 23 tuberculous, not a very marked difference. Among the children in the West-square Orphans' Home, many of whom had lost one or both parents from consumption, there has been little eye trouble and only one definite phlyctenular case since 1921. Where the surroundings were bad most children's diseases have been equally common in normal controls, but more phlyctenular children had suffered from running noses and ears, and many more from diseased tonsils and adenoids. Malnutrition is thought to be a strong predisposing cause, also a faulty balance of the dietary ration, as excess of carbohydrate (or deficiency of fat?). These investigations tend to discredit the view that phlyctenular conjunctivitis is a manifestation of "tuberculotoxemia," and, likewise, other bacteriological experiments have been completely negative. Hence the use of tuberculin in treatment does not appear rational, and even Pirquet has largely discarded it for open air and nutritional treatment.—*The Problem of the Phlyctenular Child, L. H. Savin and T. W. Preston, Lancet, May 9, 1925, ccviii, 965.* —(*A. P.*)

Hilum Tuberculosis in Children.—During childhood cases of pathologically active bronchial lymph-node tuberculosis are exceedingly numerous. Clinically, however, the determination of such pathological activity is not as important as the recognition of those which are likely to flare up or show exacerbations. Cases with pulmonary infiltrations about the hilum are much more frequent and more important clinically than those with actual (lymph node) tumor formation, and in the differential diagnosis the fluoroscopic examination will be found far superior to the flat roentgenogram. The most important and commonest cause of such infiltration seems to be a superinfection which forms the introduction to a clinical exacerbation. It, therefore, becomes of great importance to recognize the possible significance of hilum infiltrations and make every effort to prevent constant reinfection or superinfection. The latter can perhaps best be accomplished by taking the child into the hospital until such time as all members of the family have been examined or other sources of infection determined.—*Zum Problem der Bronchialdrüsentuberkulose, insbesondere der Hilus-Lungeninfiltrierungen, F. Redeker, Arch. f. Kinderhk., December, 1924, lxxv, no. 2, 106.*—(*T. C. H.*)

Tuberculosis of Tracheobronchial Lymph Nodes.—Smellie has noted tuberculosis of the tracheobronchial lymph nodes 47 times in 450 autopsies (10 per cent). Of the various dangerous complications of this condition, rupture of a caseous node into one of the thin-walled blood-vessels, with consequent fatal miliary tuberculosis, is one of the most frequent. The esophagus, trachea, bronchi, and pericardium, offer increased resistance and are rarely involved in the suppurative process. Two cases of esophageal perforation are presented: one, a boy of six, had perforation of one esophagus and left bronchus, without local symptoms; the other, a girl of eight, had esophageal and pericardial perforation, the signs being those of pulmonary fibrosis and peritonitis. Two cases of esophageal "traction diverticula" are presented, in children three and nine years old,—the former having osteomyelitis and septic meningitis, and the latter miliary tuberculosis. These diverticula, first described by Rokitansky and so named by Zenker, are found in the anterior esophageal wall immediately below the bifurcation of the trachea, usually somewhat to the right of the midline, and are produced by traction from the fibrosis of a previously inflamed lymph node. Four cases of bronchial perforation are presented, all from caseous lymph nodes. One was in a boy of six; one in a girl of ten; one in a girl of ten months; one in a boy of six months, all four cases having miliary tuberculosis. Two of these patients had tuberculous meningitis.—*Some Unusual Sequellae of Tuberculous Tracheo-Bronchal Adenitis in Children, J. M. Smellie, Brit. J. Child. Dis., April–June, 1925, xxii, 110.*—(*P. J. W.*)

Chronic Nontuberculous Tracheobronchial Adenopathies in Children.—The authors discuss the commonly accepted view that persistence and recurrence of bronchopulmonary infections are due to the persistence of chronic ordinary tracheobronchial adenopathies, remaining after the original acute infection. Their observations lead them to doubt whether *chronic* nontuberculous adenopathies exist at all. They emphasize that they are interested only in the results of X-ray pictures taken three, six, twelve months after the acute disease. In the patients studied, all with negative Pirquet tests, the X-ray does not reveal a group of clear-cut, rounded shadows at the hilum, but, instead, elongated bands forming a triangular outline with the apex at the hilum and the base at the dome of the diaphragm. The shadow is extremely mobile; and during respiration the outline of the diaphragm is frequently deformed, presenting the "festoon sign" of Maingot. "Basal peribronchitis" is the term applied by the latter. In the opinion of Guinon and Levesque, it is not difficult to differentiate between the tuberculous and nontuberculous nature of these cases, if the points above noted are borne in mind. The appearance of numerous calcification shadows in pictures of ordinary bronchopneumonia may cause confusion with tuberculosis. But, instead of being shadows of true calcified nodules, these are very likely to represent points of intersection of vessels, and to appear and disappear at intervals. The authors conclude by reiterating their doubt as to the existence of *chronic* nontuberculous tracheobronchial adenopathies. —*À propos des adénopathies trachéobronchiques chroniques nontuberculeuses, L. Guinon and J. Levesque, Arch. d. Méd. d. Enf., August, 1925, xxviii, 465.*—(*P. J. W.*)

Pleural Adhesions in Tuberculosis in Children.—Attention is called to the frequency with which pleural adhesions, localized or generalized, and filled with miliary tubercles, are found at autopsies in babies, with no other parenchymatous lesion than the primary one. The adhesions are

the direct consequence of this lesion, and their diagnosis is very important because of their grave prognostic bearing. Since diagnosis is difficult because of their latency, it is recommended that when the X-ray shows a primary lesion with a fluffy border attempts at insufflation of the pleural cavity might offer the only pathognomonic test. Kuss objects to this procedure on the ground that the interest of this diagnosis does not justify the risk entailed therein.—*Les symphyses évolutives des séreuses au cours de la tuberculose de l'enfance; rôle du chancre d'inoculation dans leur production, J. Lévesque, Meeting, Section d'Études Scientifiques de l'Oeuvre de la Tuberculose, March 14, 1925, reported in Presse Méd., April 1, 1925, no. 26, 426.*—(*E. H. K.*)

Pulmonary Sclerosis Following Tuberculous Splenopneumonia in Infancy.—Two cases are reported of chronic splenopneumonia which ended in pulmonary sclerosis. Following the injection of lipoidol large bronchial dilatations were seen radiographically in the midst of the scar tissue, which acted as a causative agent in the production of eccentric dilatation. The importance of lipoidol injections to reveal these lesions is emphasized.—*Evolution scléreuse de la spleno-pneumonia tuberculeuse de l'enfant avec dilatation bronchique secondaire, P. Armand-Delille, R. Levy and J. Marie, Meeting, Soc. Médicale des Hôpitaux de Paris, March 6, 1925, reported in Presse Méd., March 11, 1925, no. 20, 319.*—(*E. H. K.*)

Fibrosis at Base of Lungs in Children.—An increase of fibrous tissue at the base of the lung consequent upon measles and acute pulmonary infection is far from rare in children. It appears to be secondary to an inflammatory condition in or around the alveoli or bronchioles, and probably also to pleural involvement. The condition is sometimes confused with pulmonary tuberculosis; but the rarity of this latter as a chronic disease in children, the difference in symptomatology, and the general position of the process, should sufficiently distinguish the two. The X-ray picture shows an increase in shadow extending from the hilum outward and down toward the diaphragm, the edge of which is likely to appear blurred. There is usually peribronchial thickening with some hilum-node enlargement. The definite mottling seen in fibrocaseous tuberculosis is conspicuous by its absence, and the shadow is not that seen in pneumonic consolidation. The prognosis depends upon whether the process is arrested or whether a reinfection, a gradual extension of the fibrosis, or the supervention of a bronchiectasis should take place.—*Fibrosis at the Base of the Lungs in Children, K. H. Tallerman, Arch. Pediat., March, 1925, xlii, 176.*—(*P. J. W.*)

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